Editorial

Communicating risks in medicine: do patients understand what they are agreeing to?

The great age of modern medicine has destroyed certainty for both doctors and patients. Whereas giving antibiotics for pneumonia or admitting a patient to hospital for probable appendicitis are both straightforward decisions for a GP, most present-day consultations are less clear-cut. Most treatment decisions involve GPs weighing more finely balanced benefits and harms.

Clinicians have to consider the opposing risks of action compared with inaction in most consultations: for example, when deciding whether to screen for prostate, breast, or bowel cancer; or to prescribe antibiotics for otitis media, or HRT for menopausal symptoms.

It is no longer acceptable for doctors to weigh up these competing risks, and then make decisions on their patients' behalf. The General Medical Council's (GMC) guidance on consent, which was updated in 2008, now explicitly states that doctors must empower patients to make their own decisions, by communicating the likelihood of benefit and harm from treatments, and how these compare with not treating:[1]

"You must give patients the information they want or need about options for treating or managing the condition, including the option not to treat; the potential benefits, risks and burdens, and the likelihood of success, for each option…"

For patients, the benefit of taking antibiotics for cellulitis seems obvious, as they can see their symptoms improve. However, people asked to take statins or antihypertensives for asymptomatic risk factors will never know whether the treatment has helped, as these treatments reduce, but do not abolish, the risk of CVD. It is essential that patients understand these complexities to enable them to make informed decisions. However, effective communication about risk is not easy.

It is worth pausing to think about the words doctors use. The European Union (EU) has proposed a standardised, plain-English vocabulary of risk to describe the frequency of medication side effects: from "very rare" (less than 0.01%) to "very common" (greater than 10%).[2] Many doctors will have used a similar strategy, whether reassuring a patient of the "very low" risk of DVT with the combined oral contraceptive pill, or warning a 50-year-old man or woman with hypertension of the "high chance" of having a heart attack if he or she does not stop smoking. The usefulness of this approach has been evaluated by a questionnaire study, which asked 200 people to estimate the size of risk conveyed by each of the EU standard phrases.[3] It found that people vastly overestimated the risk for all of the descriptions. "Very rare" was assumed to represent a risk of 4% — a forty-fold overestimate. Nor were the participants' responses consistent: there was a wide spread of responses in every case. It is clear from these results that describing risks in this way is unreliable, and likely to mislead patients.

Numbers, however, must be used carefully if they are to be informative. A 21st century GP will spend much of the day counselling people about cardiac risk. After the publication of the recent "JUPITER" trial, which examined the effect of rosuvastatin in primary prevention of cardiac disease, many people will have visited their GP, anxious to know whether they should be on a statin themselves.[4] Such

confusion is not surprising. The statistics quoted by the BBC news website are representative of how the study was reported in the media as a whole:[5]

“20 mg a day of rosuvastatin was found to have cut cholesterol by 50% and C-reactive protein by 37%.”

“Overall, the chance of a heart attack, stroke, hospital admission for chest pain or death from cardiovascular disease was cut by 44%”

This mixture of relative risk reductions and surrogate outcomes was certain to hoodwink the reader. The absolute risks reported in the RCT were rather less dramatic: the combined outcome of cardiovascular death, heart attack, stroke, or hospital admission for chest pain, was calculated to occur over 1 year in 0.8% of people with rosuvastatin, and 1.4% of people with placebo.[4]

Aside from sensationalist relative risks, understanding absolute risks is not simple. A questionnaire study of 42 people in Taiwan found that respondents were significantly more likely to agree to have an influenza vaccination when its side effect risk was presented as “5%” rather than as “1 in 20”.[6] Do patients struggle with percentages more than we recognise? A study by Stacey Sheridan and colleagues, involving 357 men and women who came to a general medical clinic, suggests that they do.[7] Each participant was given three maths problems to solve, to assess how well they interpreted simple percentages. Only 2% got all three correct, and 71% scored either 0 or 1 out of 3. This group was well educated: most had some university education, and many said that they had some statistics training in the past.

Calman and Royston have created a scale of “community risks” as a useful alternative to numeric statistics.[8] Abstract numbers are converted into tangible population sizes with this method: “1 person in 100” translates to “1 person in an average street”; “1 person in 1,000,000” is equivalent to “1 person in a city”. Using this method, the risk of developing DVT in a year while on the combined oral contraceptive pill is equivalent to 15 people being affected in a large town. This method may lose a little accuracy, but is surely easier to grasp than the equivalent percentage.

Picture charts that represent risk have also been designed to help to overcome problems with numbers. The patient-friendly “smiley faces” chart attempts to avoid the use of numbers altogether.[9] Risks are presented on a 10 x 10 chart of 100 faces, which represent 100 people. If the person gets better, the face smiles. If not the face is sad and red. These charts work very well for risks of 1 in 5, or 1 in 20, and so would suit describing the relative ineffectiveness of antibiotics in tonsillitis. However, they are less helpful for risks that occur in less than 1% of people.

Although these innovative alternatives make sense, there is still a lack of research into how well they are understood by patients and their doctors, and how best to use them in the consultation. This research is urgently needed. So, what should we do in the meantime? Incorporating risk communication into the communication skills part of undergraduate and postgraduate training would at least increase awareness of some common pitfalls. It also seems sensible to avoid percentages and vague verbal descriptions of risk altogether. Use absolute risks where possible, and describe them as natural frequencies (e.g. “1 in 20”). This is the policy adopted by Clinical Evidence, which reports absolute as well as relative statistics wherever possible. In the absence of more substantial research, for common conditions, why not experiment with a few visual aids? After all, patients can only give true informed

consent once they have properly understood the risks of benefit and harm associated with treatment. What is clear, however, is that the old system of careless words and percentages is both misleading and inadequate.

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References

1. General Medical Council, 2008. Consent: patients and doctors making decisions together. http://www.gmc-uk.org/guidance/ethical_guidance/consent_guidance/index.asp (last accessed 14 December 2008).

2. EC Pharmaceutical Committee 1998. A Guideline on the Readability of the Label and Package Leaflet for Medicinal Products for Human Use. http://ec.europa.eu/enterprise/pharmaceuticals/eudralex/vol-2/c/gl981002.pdf (last accessed 24 November 2008).

3. Berry DC. Provision of information about drug side-effects to patients. Lancet 2002;359:853–854.

4. Ridker PM, Danielson E, Fonseca FA, et al. Rosuvastatin to prevent vascular events in men and women with elevated C-reactive protein. N Engl J Med 2008;359:2195–2207.

5. BBC News. Statin use 'may benefit healthy' BBC News website http://news.bbc.co.uk/2/hi/health/7715707.stm; 9 November 2008 (last accessed 12 December 2008).

6. Tab SB, et al. Risk perception is affected by modes of risk presentation among Singaporeans. Ann Acad Med Singapore 2005;34:184–187.

7. Sheridan SL, Pignone MP, Lewis CL. A randomized comparison of patients' understanding of number needed to treat and other common risk reduction formats. J Gen Intern Med 2003;18:884–892.

8. Calman K, Royston G. Personal paper: risk language and dialects. BMJ 1997;315:939–942.

9. Cates C. "Visual Rx – What is it?" Dr Chris Cates EBM website http://www.nntonline.net/visualrx/introduction/ (last accessed 12 December 2008).